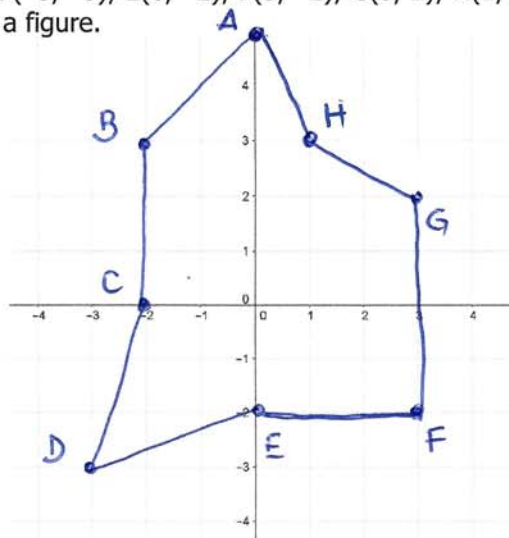
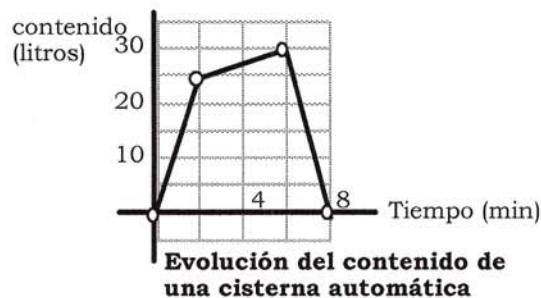




1. Draw in a system of coordinate axes the following points:
 $A(0, 5)$; $B(-2, 3)$; $C(-2, 0)$; $D(-3, -3)$; $E(0, -2)$; $F(3, -2)$; $G(3, 2)$; $H(1, 3)$
 Join them in order to create a figure.



2. In this graph:
- Write the variables and its units.
 - Make a table with the points that you see in the graph.
 - Which is the maximum value?
 - What are the increasing interval and the decreasing interval?
 - Write the process that describes this graph.



a) Time (m); Volume (l)

b)

x	y
0	0
2	25
6	30
8	0

c) 30l at 6 minutes

d) Increasing interval: $[0, 6]$

Decreasing interval: $[6, 8]$

e) The filling of a deposit and the withdrawal of it

3.

Write what is the independent variable for these functions.

- a) The time it takes to fill a 100 litres water drum in a water source.
- b) The length or perimeter of a wheel.
- c) The tax I pay buying a car.
- d) The spending time for an object to reach the ground when we drop it.
- e) The width of a book.

- a) The flow
- b) The radius
- c) The price of the car.
- d) The height
- e) The number of pages

4.

- a) What are the variables for the following functions?
- b) What are the independent and dependent variables?
- c) What is the formula for each one?

1. A hair dryer heats the air 10°C . x - input temperature; y - output temperature-

- a) input temperature / output temperature.
- b) Independent : input / dependent : output
- c) $y = 10 + x$

2. The kilogram of apples is €0.90

- a) The weight and the price
- b) Independent : the weight / Dependent : the price
- c) $y = 0.90 \cdot x$

3. The train costs €0.10 per kilometer plus €2 of insurance.

- a) The distance and the price
- b) Independent : the distance ; Dependent : the price
- c) $y = 2 + 0.10x$

4. The surface area of a square is equal to the side squared.

- a) The side and the area
- b) Independent : the side ; Dependent : The area .
- c) $y = x^2$

5. Using the graph answer the following questions:

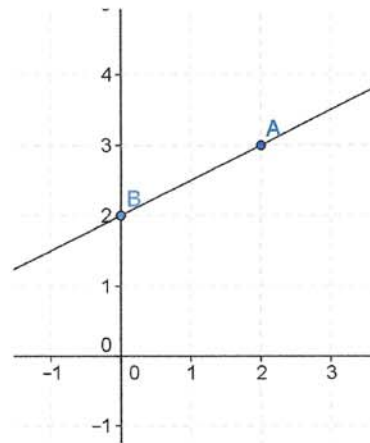
- Do a table with the two values A and B.
- Calculate the slope.
- Work out the formula.

a)

x	y
0	2
2	3

b) $m = \frac{3-2}{2-0} = \frac{1}{2}$; $b = 2$

c) $y = \frac{1}{2}x + 2$



6. The formula of a function is $y = -3 + 5x$.

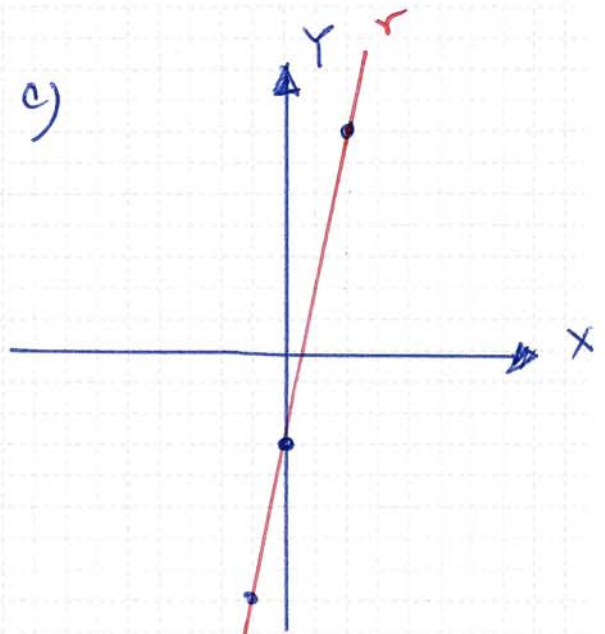
- How much is its gradient and its y-intercept?
- Do a graph with 3 values.
- Draw the graph.

a) $b = -3$; $m = 5$

b)

x	y
0	-3
2	7
-1	-8

$y = -3 + 5 \cdot 0 = -3$
 $y = -3 + 5 \cdot 2 = 7$
 $y = -3 + 5(-1) = -8$



7. A repair costs €5 for travel expenses plus 12 € per hour of work. Find the formula for the function that relates the cost with the time spent on the repair.

$y = 5 + 12 \cdot x$

8. I paid 5 euros for a 100 Km train trip and 7 euros for a 200 Km train trip.

- a) Do a table with the two above values.
 b) What is the formula that relates the price with the travelling distance? (It has to be $y = mx + b$)
 c) What is the insurance fee?
 d) What is the price per kilometer?

a)

x	y
100	5
200	7

 | b) $m = \frac{7-5}{200-100} = \frac{2}{100} = \frac{1}{50} = 0.02$

$y = mx + b$; $y = 0.02x + b$
 $5 = 0.02 \cdot 100 + b$; $5 = 2 + b$; $b = 3$
 $y = 0.02x + 3$

c) 3€ ; d) 0.02€/km

9. a) What are the three ways to describe a function?

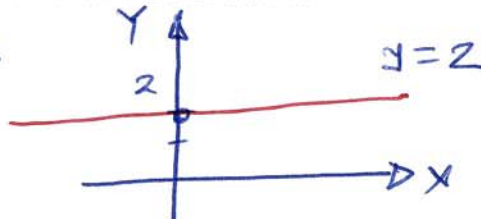
Table / Graph / Formula or equation

- b) Could you tell what is the function whose formula is $y = mx + b$. What is the name for 'm' and 'b'?

Affine function. m: slope; b: y-intercept

- c) Could you write the formula for a horizontal line and draw it.

For example, $y = 2$



- d) If $A(x, y)$ is a data from a function of inverse proportionality, what would be the value of the constant of proportionality?

$k = x \cdot y$